

DECLARATION OF ROBERT M. ROSEEN

Pursuant to 28 U.S.C. § 1746, I, Robert M. Roseen, declare the following based upon my personal knowledge:

1. My name is Robert M. Roseen. I am 50 years old and competent to testify to all facts contained in this declaration. I submit this declaration in support of Conservation Law Foundation (“CLF”)’s Comment on the United States Environmental Protection Agency (“EPA”)’s
 - a. Draft 2020 NPDES Permit No. MA0028037 for Sprague Operating Resources LLC, for the facility located at Sprague Twin Rivers Technology (TRT) Terminal, 740 Washington Street, Quincy, MA 02169.
 - b. Draft 2020 NPDES Permit No. MA0020869 for Sprague Operating Resources LLC, for the facility located at Sprague Quincy Terminal, 728 Southern Artery, Quincy, MA 02169.
2. I received a Ph. D. degree in Civil-Water Resources Engineering from the University of New Hampshire in 2002.
3. I received a Master of Science degree in Environmental Science and Engineering from Colorado School of Mines in 1998.
4. I am a Registered Professional Engineer in the state of Massachusetts, New Hampshire, and Maine.
5. I am a Diplomate of Water Resources Engineering by the American Academy of Water Resources Engineers.
6. I have over thirty years of experience in stormwater management and investigation, design, testing, and implementation of innovative approaches to stormwater management.

7. I am an expert in water resources, stormwater management, and the owner of Waterstone Engineering, PLLC.
8. I have designed and implemented stormwater performance monitoring for over forty best management practices and project sites including for water quality certification for NPDES permits for MSGP, MS4, individual permits, and Clean Water Act enforcement investigations.
9. I am a contributor to the industry standard for BMP performance monitoring¹ and a coauthor on national guidelines for BMP certification.²
10. I am a recognized industry leader in green infrastructure and watershed management, and the recipient of Environmental Merit Awards by the US Environmental Protection Agency Region 1 in 2010, 2016, and 2019. In 2010, I received the prestigious certification as a Diplomate by the American Academy of Water Resources Engineers (D. WRE), to certify competence in water resources specialization for 1) advanced stormwater management, and 2) design and execution of experiments, data analysis, and interpretation.
11. I consult nationally and locally on stormwater management and planning and directed the University of New Hampshire Stormwater Center for 10 years and am deeply versed in the practice, policy, planning of stormwater management. I have led the technical analysis of dozens of nutrient and contaminant studies examining surface water pathways, system performance, management strategies, and system optimization.

¹ Geosyntec Consultants and I. Wright Water Engineers (2009). "Urban Stormwater BMP Performance Monitoring." Prepared with support from the US EPA, Water Environment Research Foundation, Federal Highway Administration, and the Environmental and Water Resources Institute of the American Society of Civil Engineers, <www.bmpdatabase.org.

² Guo, Q. (2009). ASCE/EWRI Task Committee on Guidelines for Certification of Manufactured Stormwater BMPs, ASCE The Stormwater Infrastructure Committee, Water, Wastewater, and Stormwater Council (WWSC) The Wet Weather Flow Technology Committee of the Urban Water Resources Research Council (UWRRC).

12. I have provided Clean Water Act expert services for dozens of projects including consultation, analysis, modeling, advice, reports and testimony in regards to compliance with TMDLs and Nutrient Control Planning, Construction General Permits, Municipal Separate Storm Sewer System (MS4) Permits, and Multi Sector General Permits.
13. I served as Research Assistant Professor for five years with expertise in water resources engineering, stormwater management (including low impact development design), hydrology and hydraulics evaluations, stream restoration and enhancement alternatives, dam removal assessment, groundwater investigations, nutrient and TMDL studies, remote sensing, and GIS applications. This includes having taught classes on Stormwater Management and Design, Fluid Mechanics, and Hydrologic Monitoring and lectures frequently on these subjects.
14. Notable professional activities include chairing the ASCE EWRI 2016 International Low Impact Development Conference, an annual event that draws participants from around the world to discuss advances in water resources engineering, and participating until 2017 as a Control Group member for the ASCE Urban Water Resources Research Council (UWRRC). I have also served on the ASCE Task Committee on Guidelines for Certification of Manufactured Stormwater BMPs, EWRI Permeable Pavement Technical Committee, and the Hydrology, Hydraulics, and Water Quality Committee of the Transportation Research Board. I have been the author or co-author of over two dozen professional publications on the topics of stormwater runoff, mitigation measures, best management practices (BMPs), etc. I have extensive experience working with local, state, and regional agencies and participate on a national level for USEPA Headquarters, WEF, and the White Council on Environmental

Quality on urban retrofit innovations and next generation LID/GI technology and financing solutions.

I. EVALUATION OF THE DRAFT 2020 NPDES PERMITS NO. MA0028037 AND NO. MA0020869 FOR SPRAGUE OPERATING RESOURCES LLC

15. I have reviewed the Draft 2020 NPDES Permits No. MA0028037 and No. MA0020869 for Sprague Operating Resources LLC.
16. I am familiar with the 2015 Multi-Sector General Permit (MSGP).
17. I have reviewed National Pollutant Discharge Elimination System (NPDES) General Permit For Remediation Activity Discharges for the Commonwealth of Massachusetts.
18. I also reviewed the 1984 EPA Method 610 for the analysis of Polynuclear Aromatic Hydrocarbons (“PAHs”) ³, the 2016 EPA Method 624.1 for the analysis of Purgeables by GC/MS⁴, the analytical methods approved under 40 CFR Part 136, and the Massachusetts Water Quality Standards (WQSs).

A. The Minimum Limits For PAHs Are Too High with Respect to Standard Analytical Detection Limits

19. Based on my professional judgment and experience and knowledge of stormwater analysis, I believe the minimum level (ML) of 0.1 ug/L for Group I PAHs is too high. For example, the ML for benzo(a)pyrene is more than 4 times the method detection limit (MDL) of 0.023 ug/L for Method 610, the approved analytical method under 40 CFR Part 136. It is more than 6 times the MDL of 0.016 ug/L for Method 8270. While EPA Method 8270 is not approved

³ USEPA (1984). Method 610: Polynuclear Aromatic Hydrocarbons. Washington DC, Office of Water, United States Environmental Protection Agency (EPA).

⁴ USEPA (2016). Method 624.1: Purgeables by GC/MS. Washington DC, Office of Water, United States Environmental Protection Agency (EPA).

under 40 CFR Part 136, it should be and is routinely used for detection of PAHs as described by EPA: “This method is used to determine the concentration of semivolatile organic compounds in extracts prepared from many types of solid waste matrices, soils, air sampling media and water samples”.

20. Methods 610 and 8270 are readily available analytically at labs in the region and provide lower detection limits than the ML.
21. Similarly, I believe the ML of 0.1 ug/L for benzo(a)pyrene is inconsistent with the Draft Permits of an average monthly water quality-based effluent limitations (WQBELs) of 0.018 ug/L. An ML of 0.1 ug/L is more than 5 times the WQBEL of 0.018 ug/L and as such using 0.1 ug/L as an ML would make it impossible to ensure compliance with Massachusetts WQSs, a requirement of the Draft Permit.
22. The ML is an even greater multiple over the MDL for several other Group I PAHs.
23. Group I PAHs are designated as highly carcinogenic, known animal carcinogens, and probable human carcinogens.
24. Based on these items, it is my professional judgment that the ML does not achieve the EPA requirement that tests be “sufficiently sensitive,” which EPA has defined as when: 1) the method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) the method has the lowest ML of the analytical methods approved.” As stated in the draft permits, the “minimum level” is the higher of “the lowest calibration point in a method or a multiple of the method detection limit (MDL).” Method 610 lists an MDL for the Group I PAHs. Neither Method 610 nor the Draft Permits list the multipliers used to calculate the ML. The ML set by the

draft permits is inappropriate because significantly lower detection limits are readily available as a standard of practice and as such fails the test of “sufficiently sensitive”.

25. The same analysis also applies to Group II PAHs where the ML is set far higher at 5 ug/L.

The MDL under Method 610 for many Group II PAHs are several orders of magnitude lower than the ML established by the Draft Permits.

B. Sampling Frequency is Grossly Insufficient to Determine Monthly or Annual Average Concentrations for PAHs

26. Based on my professional judgment and experience and knowledge of stormwater monitoring, a single monthly grab sample is grossly insufficient for the assessment of benzo(a) pyrene (and other) effluent limitations.

27. Section 2.2.4 Reasonable Potential of the Draft Permits states that facilities “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality.” The evaluation of this standard would be impossible with the superficial level of monitoring proposed in the Draft Permit.

28. Similarly, annual grab sampling of once per year for the other PAHs (Group I and Group II) is insufficient to characterize runoff concentrations for PAHs and thus the reasonable potential to cause or contribute to an excursion above the water quality criteria (WQC).

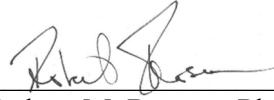
29. An old adage holds, if you want to be confident in your data, take one measurement; if you want to truly understand your data, take many. Grab sampling by nature is grossly deficient for many reasons, namely the timing of a single sample may or may not coincide with the storm and pollutant load. The inferior nature of grab samples can only be improved by taking

multiple samples. Section C Monitoring Requirements of the Draft Permits states that “samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.”

30. The same reasoning applies to the draft permit’s 1/Year grab samples for the other Group I PAHs (as well as Group II PAHs). A single grab sample cannot establish an average annual concentration for those compounds. Also, 1/Year sampling is not sufficient for EPA to determine whether Group I or Group II PAHs have a reasonable potential to cause or contribute to an excursion above water quality criteria. It is not an understatement to state that in no defensible manner could a single grab sample be reasonably considered to characterize average annual or monthly maximum concentrations.
31. In reaching the above conclusions, I weigh heavily my experience in stormwater investigations having tested over forty different stormwater systems and project sites, and having authored numerous peer reviewed publications on stormwater monitoring. I have reviewed years of MSGP sample collection records for other permits and have observed that monitoring and reporting protocols are rarely followed for sample time and recorded notes. This would be expected for some events that were to occur during non-business hours; however, a trend of improper sampling would bias the sampling results by obtaining samples at the end of a storm which are typically far less contaminated. This phenomenon is well established in the literature.⁵
32. For these reasons I believe the Draft Permits sampling frequencies are grossly insufficient to determine average monthly or average annual PAH concentrations for the purpose of assessing the risk of causing or contributing to excursions above water quality criteria.

⁵ Sansalone, J., and Buchberger, S. (1997). "Partitioning and First Flush of Metals in Urban Roadway Storm Water." Journal of Environmental Engineering, 123(2): 134-143.

I swear, under penalty of perjury, that the foregoing is true and correct to the best of my knowledge.

A handwritten signature in black ink, appearing to read "Robert M. Roseen", written over a horizontal line.

Robert M. Roseen, Ph.D., PE, DWRE

Executed on February 2, 2021